

WHAT IS CLAIMED IS:

1. A switch for switching packets in a network comprising:

port cards which send packets to and receive packets from the network; and

fabrics connected to the port cards for switching portions of the packets, each fabric having queues in which portions of packets are stored, each queue corresponding to one of the port cards, each fabric having a determining mechanism which determines which queue the portions of the packet should be placed in, the detecting mechanism dynamic to reflect changes in port card quantity without any change in connection data of the packets.

2. A switch as described in Claim 1 wherein each fabric has a memory controller having the queues and the detecting mechanism.

3. A switch as described in Claim 2 wherein the detecting mechanism includes an input lookup which identifies in which queue portions of the packet are placed.

4. A switch as described in Claim 3 wherein the input lookup identifies more queues than are present in the switch.

5. A switch as described in Claim 4 wherein the fabric identifies which queues correspond to which output ports from a first signal it receives from the network.

6. A switch as described in Claim 5 wherein the input lookup has a 10-bit field.

7. A switch as described in Claim 6 wherein the fabric receives a second signal which identifies which bits of the 10-bit field are to be used to identify the queue the portions of the packet are to be stored in.

8. A switch as described in Claim 7 wherein the 10-bit field comprises bits 0-7 which identifies the output port to which the queue connects and bits 8 and 9 identifies a priority of the portions of the packet.

9. A switch as described in Claim 8 wherein the second signal has a 2-bit field which indicate which 8 of the 10 bits of the input lookup are to be used to identify the queue the portions of the packet are to be stored in.

10. A switch as described in Claim 9 wherein the 8 bits of the 10 bits can be either bits 0-5, 8 and 9 which are 4 priorities on up to 64 output ports, or bits 0-6 and 8 which are 2 priorities up to 128 output ports, or bits 0-7 which are 1 priority up to 256 output ports.

11. A switch as described in Claim 10 wherein the fabric has an aggregator which receives portions of packets and connects to the memory controller, and a separator which connects to the memory controller and sends portions of the packets to the port cards.

12. A switch as described in Claim 11 wherein the port card includes a striper which sends portions of packets as stripes to the aggregator of each fabric, and an unstriper which receives portions of packets as stripes from the separator of each fabric.

13. A method for switching packets in a network comprising the steps of:

receiving packets at port cards of a switch from the network;

sending portions of the packets as stripes to a respective number of fabrics of the switch;

storing the respective portions of packets in queues of the fabric corresponding to port cards the portions of the packets are to be sent to from the respective fabrics;

sending the portions of packets as stripes to the port card;

transmitting packets from the port card to the network;

changing the number of port cards in the switch;

receiving more packets at the port cards;

sending portions of the more packets to the number of the fabrics after the number of the fabrics has changed; and

storing the portions of the more packets in the queues corresponding to the port cards the portions of the packets are to be sent to without any change to connection data in the packets.

14. A method as described in Claim 13 wherein the storing step includes the step of looking up in an input lookup, which identifies in which queue portions of the packets are placed, which queue the portions of the packets are to be placed.

15. A method as described in Claim 14 including after the changing step, there is the step of receiving a first signal which identifies in which queues portions of the packets are to be placed.

16. A method as described in Claim 15 including after the receiving the first signal step, there is the step of receiving a second signal which identifies which bits of a 10-bit field of the input lookup are to be used to identify the queue the portions of the packet are to be stored in.

17. A method as described in Claim 16 wherein the receiving the second signal step includes the step of reviewing a 2-bit field of the second signal which indicate which 8 of the 10 bits of the input lookup are to be used to identify the queue the portions of the packets are to be stored in.

18. A method as described in Claim 17 wherein each fabric has a memory controller having the queues and the sending portions of packets step includes the step of sending the stripes to an aggregator of each fabric which receives portions of packets and connects to the memory controller.

19. A method as described in Claim 18 wherein the portions step includes the step of sending with a separator of the fabric which connects to the memory controller portions of the packets as stripes to the port cards.

20. A method as described in Claim 19 wherein the sending portions step includes the step of sending with a striper portions of packets as stripes to the aggregator of each fabric.

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21. A method as described in Claim 20 wherein after the sending with the separator step, there is the step of receiving the stripes from the separator of each fabric at an unstriper of each ~~port card.~~

1. The first step is to identify the problem. This involves understanding the current situation and the desired outcome.